No. 766,190. PATENTED AUG. 2, 1904.

M. E. LOEHR.

HEATING DRUM.

APPLICATION FILED MAY 4, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

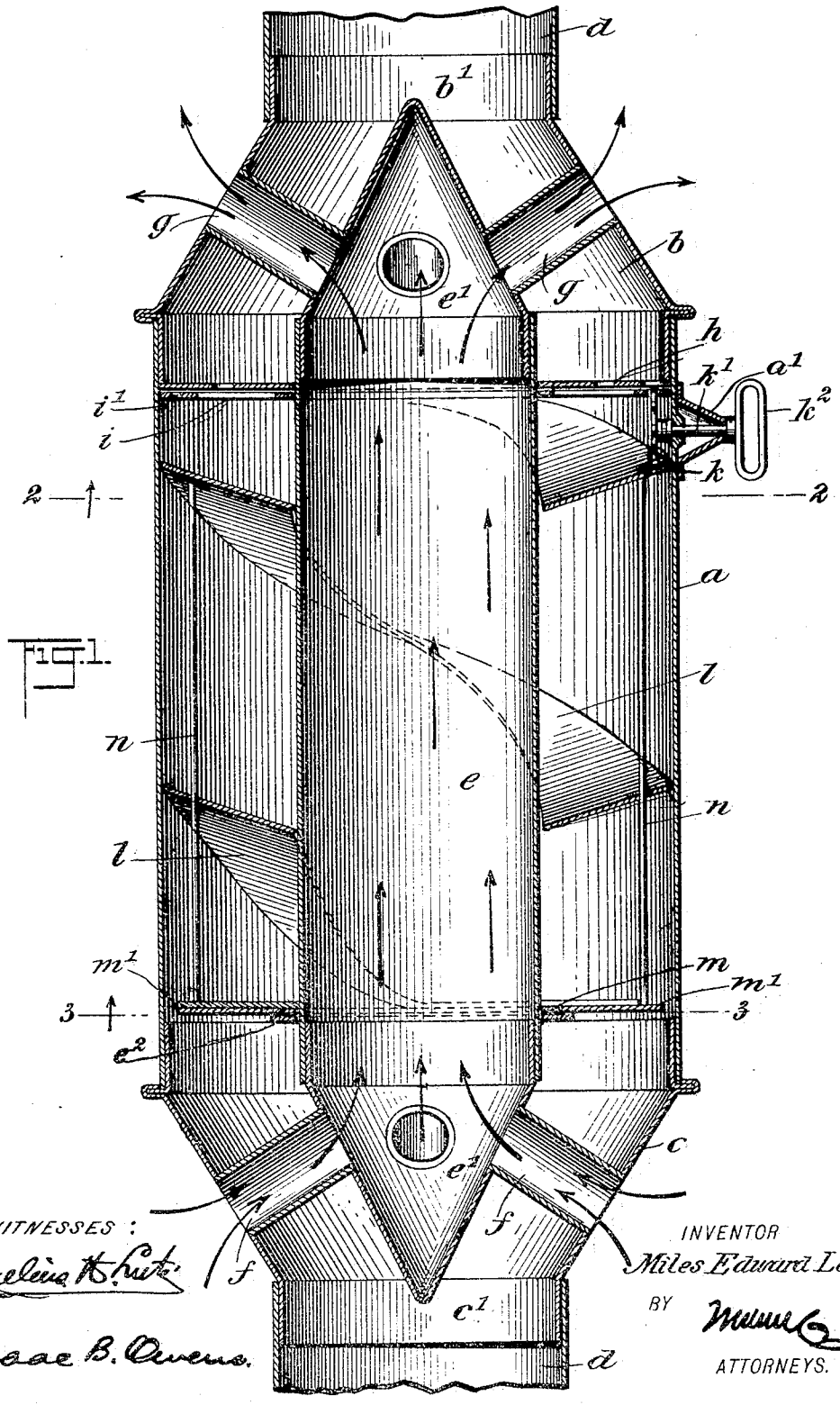


Fig. 1.

WITNESSES :

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INVENTOR

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.

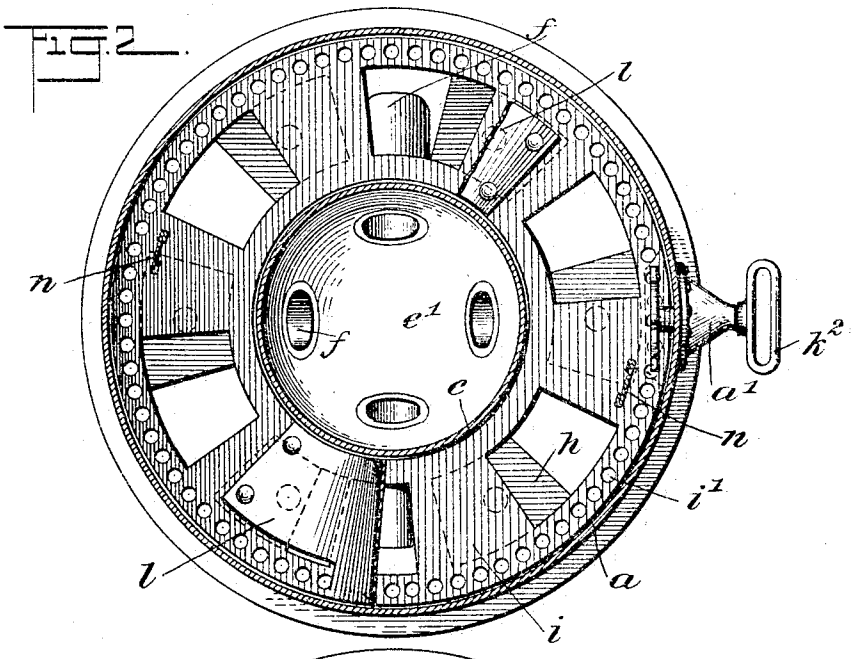


Fig. 3.

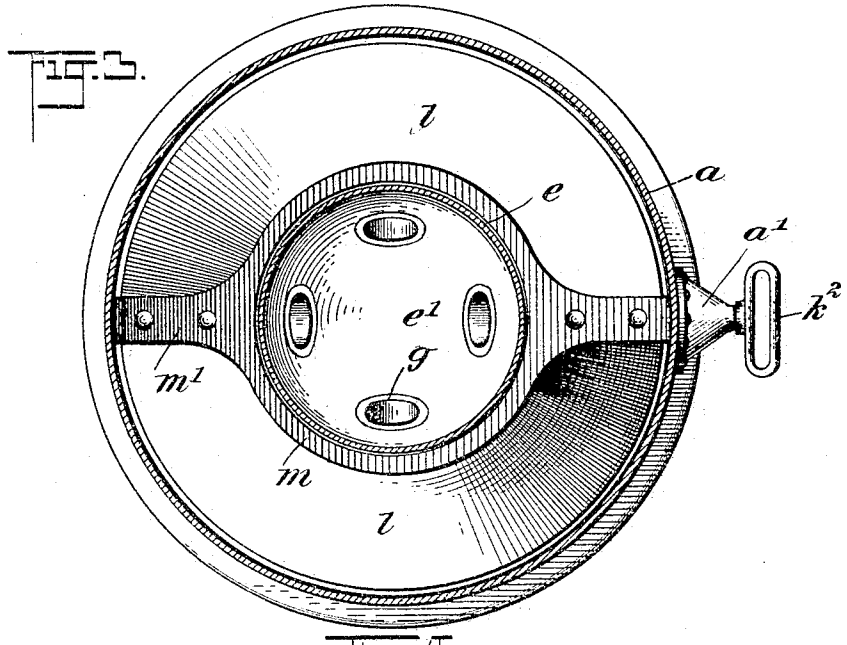
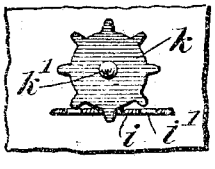


Fig. 4.



WITNESSES:

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No. 766,190. Patented August 2, 1904.

UNITED STATES PATENT OFFICE.

MILES EDWARD LOEHR, OF CLAYPOOL, INDIANA.

HEATING-DRUM.

SPECIFICATION forming part of Letters Patent No. 766,190, dated August 2, 1904.

Application filed May 4, 1903. Serial No. 155,521. (No model.)

To all whom it may concern:

Be it known that I, MILES EDWARD LOEHR, a citizen of the United States, and a resident of Claypool, in the county of Kosciusko and State of Indiana, have invented a new and Improved Heating-Drum, of which the following is a full, clear, and exact description.

This invention relates to a heating-drum adapted to be interposed between two stove-pipe-sections or, if desired, attached directly to the outlet-flue of a stove, so that the burning gases in passing through the drum will heat the air-compartments thereof and the air circulating through these compartments will in turn be heated thereby.

The invention resides in certain special features of construction and arrangement of parts, all of which will be fully described hereinafter.

This specification is an exact description of one example of my invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical section of the invention. Fig. 2 is a horizontal section on the line 2 2 of Fig. 1, and Fig. 3 is a horizontal section on the line 3 3 of Fig. 1. Fig. 4 is a detail view showing the pinion-gear in elevation and a part of the damper-plate in section.

The body a of the device is in the form of a cylindrical drum and has the frusto-conical ends b and c fastened thereto. Said ends are provided with cylindrical extensions b' and c', forming thimbles for connection with the pipe-sections d or other parts between which the heating-drum is interposed. An air-chamber e extends through the longitudinal center of the drum, said chamber having conical ends e' lying within the conical body ends b and c. Air-inlet tubes f pass from the lower body end c inward and slant upward into the conical lower end e' of the air-chamber, and from the conical upper end of said chamber outlet-pipes g extend through the body end b into the surrounding atmosphere. In the upper portion of the body a is located a perforated partition h, and below this partition is placed a damper-plate i, which is annular in form and lies between the air-chamber e and body a of the apparatus, the damper-plate being revoluble around the air-chamber, so as to regulate the volume of gas which may pass through the drum. Said damper-plate is provided with a number of orifices i', forming, essentially, gear-teeth, and with the walls of these orifices a star or gear wheel k operates. This gear-wheel is carried on a stem k', mounted in a suitable box a', attached to the body a and provided at its outer end with a finger-piece k^2, facilitating the revolution of the stem. By operating the gear k the damper-plate may be moved back and forth to open or close the gas-passage.

Attached to the damper-plate and extending downward spirally snugly between the elements a and e are two or more baffle-plates l, the lower ends of which are fastened to the projecting arms m' of an annulus m, which is supported to turn around the air-chamber e and on top of an annular ledge e^2, attached to said chamber and serving as a support for the annulus.

n indicates suitable braces which extend from the damper-plate i downward and are fastened to the several flights of the spiral baffle-plates l.

It will thus be seen that the spiral baffles l are arranged to turn with the damper-plate and have their inner and outer edges, respectively, in engagement with the air-chamber e and the inner walls of the drum-body a. These plates serve, therefore, not only to baffle the movement of the heated gases and to cause said gases to assume a spiral movement, but also to scrape the inner walls of the gas-passage, keeping the same clear of soot and like accumulations.

The use and operation of the invention will be familiar to persons skilled in the art. It is sufficient for me to say that by providing for the spiral movement of the burning gases through the gas-passages of the heating-drum the drum is caused to absorb the major portion of the heat of the gases, and this is transmitted to the air which enters through the tubes f, passes upward through the chamber e, and is discharged through the tubes g.

Regulation is effected by the damper-plate *i*, and the operation of this plate simultaneously clears away the soot from the interior of the body.

Various changes in the form, proportions, and minor details of the invention may be resorted to at will without departing from the spirit and scope thereof. Hence I consider myself entitled to all such variations as may lie within the intent of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A heating-drum, comprising exterior or body walls, an air-chamber located within the same, walls forming passages leading from the air-chamber through the exterior or body walls, an annular damper-plate lying between the exterior walls and the air-chamber to control the passage of the hot gases, and a baffle-plate attached to the damper-plate and moving therewith, said baffle-plate being in engagement with the inner surface of the body-walls and the outer surface of the air-chamber walls, to clear the same of soot.

2. A heating-drum, comprising exterior or body walls, walls forming an air-chamber within the body-walls, walls forming passages extending from the air-chamber through the exterior or body walls, an annular damper lying around the air-chamber walls and commanding the space between the exterior or body walls, means for operating said damper, and a spiral baffle attached to the damper and lying in the space between the air-chamber and the exterior walls and movable with the damper.

3. A heating-drum, comprising exterior or body walls, walls forming an air-chamber located within the exterior or body walls, walls forming passages leading to and from the air-chamber, an annular damper lying loosely between the air-chamber and the exterior or body walls, said damper having a rack formed thereon, a pinion meshed with the rack, means for mounting and operating the pinion, said means extending outside of the body-walls of the drum, a spiral baffle attached at one end to the damper and lying loosely in the space between the air-chamber and exterior or body walls of the drum, an annulus attached to the other end of the baffle-plate, and longitudinal connections between the annulus and the damper, substantially as described.

4. A heating-drum, comprising exterior or body walls, walls forming an air-chamber therein, walls forming passages leading between said air-chamber and the atmosphere, a rotary spiral lying loosely in the space between the air-chamber and the exterior or body walls and contacting therewith, for the purpose specified, and means in connection with the baffle and extending to the outer side of the exterior or body walls, whereby to impart a continuous turning movement to the baffle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MILES EDWARD LOEHR.

Witnesses:
OTTO BROWN,
W. W. WYMER.